Missouri Department of Natural Resources

PUBLIC NOTICE

DRAFT MISSOURI STATE OPERATING PERMIT

DATE: June 23, 2006

In accordance with the state Clean Water Law, Chapter 644, RSMo, Clean Water Commission regulation 10 CSR 20-6.010, and the federal Clean Water Act, the applicants listed herein have applied for authorization to either discharge to waters of the state or to operate a no-discharge wastewater treatment facility. The proposed permits for these operations are consistent with applicable water quality standards, effluent standards and/or treatment requirements or suitable timetables to meet these requirements (see 10 CSR 20-7.015 and 7.031). All permits will be issued for a period of five years, unless noted otherwise in the Public Notice for that discharge.

On the basis of preliminary staff review and the application of applicable standards and regulations, the Missouri Department of Natural Resources (MDNR), as administrative agent for the Missouri Clean Water Commission, proposes to issue a permit(s) subject to certain effluent limitations, schedules, and special conditions. The proposed determinations are tentative pending public comment.

Persons wishing to comment on the proposed permit conditions are invited to submit them in writing to the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102, ATTN: NPDES Permits and Engineering Section / Permit Comments. **Please include the permit number in all comment letters.**

Comments should be confined to the issues relating to the proposed action and permit(s) and the effect on water quality. The MDNR may not consider as relevant comments or objections to a permit based on issues outside the authority of the Clean Water Commission, (see Curdt v. Mo. Clean Water Commission, 586 S.W.2d 58 Mo. App. 1979).

All comments must be postmarked by July 24, 2006 or received in our office by 5:00 p.m. on July 27, 2006. The requirement of a signed document makes it impossible to accept email comments for consideration at this time. Comments will be considered in the formulation of all final determinations regarding the applications. If response to this notice indicates significant public interest, a public meeting or hearing may be held after due notice for the purpose of receiving public comment on the proposed permit or determination. Public hearings and/or issuance of the permit will be conducted or processed according to 10 CSR 20-6.020.

Copies of all draft permits and other information including copies of applicable regulations are available for inspection and copying at DNR's website, http://www.dnr.mo.gov/env/wpp/index.html, or at the Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102, between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday.

Public Notice Date: June 23, 2006 Permit Number: MO-0115487 Northeast Regional Office	
FACILITY NAME AND ADDRESS	**NAME AND ADDRESS OF OWNER**
PSF, Milan Processing Plant 22123 Highway 5 North, Milan, MO 63556	Premium Standard Farms, Inc. (PSF) 805 Pennsylvania Avenue, Suite 200, Kansas City, MO 64105-1307
RECEIVING STREAM & LEGAL DESCRIPTION	**TYPE OF DISCHARGE**
Tributary to Elmwood Branch (U) (East Fork Locust Creek (C)(WB#00610)) SW ¼, NW ¼, Sec. 35, T63N, R20W, Sullivan County	Industrial, modification and reissuance

STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0115487
Owner:	Premium Standard Farms, Inc. (PSF)
Address:	805 Pennsylvania Avenue, Suite 200, Kansas City, MO 64105-1307
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	PSF, Milan Processing Plant
Address:	22123 Highway 5 North, PO Box 99, Milan, MO 63556
Legal Description:	SW ¼, NW ¼, Sec. 35, T63N, R20W, Sullivan County
Latitude/Longitude	+3728537/-09041312
Receiving Stream:	Tributary to Elmwood Branch (U)
First Classified Stream and ID:	East Fork Locust Creek (C)(00610)
USGS Basin & Sub-watershed No.:	(10280103-080002)

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

Outfall #001 – Meat Processing Plant - SIC #2011
Activated Sludge/industrial sludge recycled as a feed additive/year round chlorination.
Design population equivalent is 88,235.
Design flow is 0.8 million gallons per day.
Design sludge production is 1,853 dry tons/year.
Storm water associated with industrial activity in the vicinity of the animal loadout area is collected and conveyed to the wastewater treatment plant. This permit authorizes the discharge of storm water associated with industrial activity relating to Food and Kindred Products (SIC #2011)

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

Effective Date

Doyle Childers, Director, Department of Natural Resources
Executive Secretary, Clean Water Commission

Expiration Date

Edward Galbraith, Director of Staff, Clean Water Commission

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

The permittee is authorized to discharge from outfall(s) with serial number(s) as specified in the application for this permit. The final effluent limitations shall become effective upon issuance and remain in effect until expiration of the permit. Such discharges shall be controlled, limited and monitored by the permittee as specified below:

OUTFALL NUMBER AND EFFLUENT PARAMETER(S)	UNITS	FINAL EFFLUENT LIMITATIONS			MONITORING REQUIREMENTS	
		DAILY MAXIMUM	WEEKLY AVERAGE	MONTHLY AVERAGE	MEASUREMENT FREQUENCY	SAMPLE TYPE
Outfall #001						
Flow	MGD	*		*	once/day	24 hr. estimate
Carbonaceous Biochemical Oxygen Demand$_5$***	mg/L	30		25	once/weekday**	24 hr. composite
Total Suspended Solids***	mg/L	36		30	once/weekday**	24 hr. composite
pH - Units	SU	****		****	once/weekday**	grab
Dissolved Oxygen	mg/L	*****		*****	once/weekday**	grab
Temperature	°C	*		*	once/weekday**	grab
Oil and Grease	mg/L	20		15	once/week	grab
Total Ammonia Nitrogen (May 1 - October 31) (November 1 - April 30)	mg/L	 5.0 7.2		 2.5 3.6	once/week	grab
Fecal Coliform	#/100mL	400		400	once/week	grab
Total Residual Chlorine	mg/L	1.0		1.0	once/month	grab
Chloride	mg/L	*		*	once/month	grab
Total Phosphorus	mg/L	*		*	once/month	grab
Total Nitrogen(Note 1)	mg/L	194		134	once/month	grab
MONITORING REPORTS SHALL BE SUBMITTED MONTHLY; THE FIRST REPORT IS DUE_____.						
Whole Effluent Toxicity (WET) Test	% Survival	See Special Conditions			Once/Quarter******	24 hr. composite
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE _____.						
Downstream Monitoring at Elmwood Branch at PSF property line near Highway 5						
Total Ammonia Nitrogen	mg/L	*		*	once/quarter******	grab
Chloride	mg/L	*		*	once/quarter******	grab
pH	mg/L	*		*	once/quarter******	grab
Dissolved Oxygen	mg/L	*		*	once/quarter******	grab
Temperature	mg/L	*		*	once/quarter******	grab
MONITORING REPORTS SHALL BE SUBMITTED QUARTERLY; THE FIRST REPORT IS DUE _____. THERE SHALL BE NO DISCHARGE OF FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.						

B. STANDARD CONDITIONS

IN ADDITION TO SPECIFIED CONDITIONS STATED HEREIN, THIS PERMIT IS SUBJECT TO THE ATTACHED Part I STANDARD CONDITIONS DATED October 1, 1980, AND HEREBY INCORPORATED AS THOUGH FULLY SET FORTH HEREIN.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (continued)

* Monitoring requirement only.
** Once each weekday means: Monday, Tuesday, Wednesday, Thursday & Friday.
*** This facility is required to meet a removal efficiency of 85% or more for $CBOD_5$ and TSS. Influent $CBOD_5$ and TSS data should be reported to ensure removal efficiency requirements are met.
**** pH is measured in pH units and is not to be averaged. The pH is limited to the range of 6.0-9.0 pH units.
***** Dissolved Oxygen Minimum Concentration is 5.0 mg/L
****** Sample once per quarter in months of February, May, August & November.

Note 1: Total Nitrogen means the total of nitrate/nitrite and total Kjeldahl nitrogen. This limit is from 40 CFR 432, Effluent Limitation Guidelines and New Source Performance Standards for the Meat and Poultry Products Category.

C. SPECIAL CONDITIONS

1. This permit may be reopened and modified, or alternatively revoked and reissued, to:
   (a) Comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a) (2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:
      (1) contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
      (2) controls any pollutant not limited in the permit.
   (b) Incorporate new or modified effluent limitations or other conditions, if the result of a waste load allocation study, toxicity test or other information indicates changes are necessary to assure compliance with Missouri's Water Quality Standards.
   (c) Incorporate new or modified effluent limitations or other conditions if, as the result of a watershed analysis, a Total Maximum Daily Load (TMDL) limitation is developed for the receiving waters which are currently included in Missouri's list of waters of the state not fully achieving the state's water quality standards, also called the 303(d) list.

   The permit as modified or reissued under this paragraph shall also contain any other requirements of the Clean Water Act then applicable.

2. All outfalls must be clearly marked in the field.

3. Permittee will cease discharge by connection to area-wide wastewater treatment system within 90 days of notice of its availability.

4. Changes in Discharges of Toxic Substances
   The permittee shall notify the Director as soon as it knows or has reason to believe:
   (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"
      (1) One hundred micrograms per liter (100 µg/L);
      (2) Two hundred micrograms per liter (200 µg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 µg/L) for 2,5 dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;
      (3) Five (5) times the maximum concentration value reported for the pollutant in the permit application;
      (4) The level established in Part A of the permit by the Director.
   (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant, which was not reported in the permit application.

5. Report as no-discharge when a discharge does not occur during the report period.

6. Water Quality Standards
   (a) Discharges to waters of the state shall not cause a violation of water quality standards rule under 10 CSR 20-7.031, including both specific and general criteria.
   (b) General Criteria. The following general water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:
      (1) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses;
      (2) Waters shall be free from oil, scum and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;

C. SPECIAL CONDITIONS (cont.)

6. Water quality Standards (cont.)

(3) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses;
(4) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life;
(5) There shall be no significant human health hazard from incidental contact with the water;
(6) There shall be no acute toxicity to livestock or wildlife watering;
(7) Waters shall be free from physical, chemical or hydrologic changes that would impair the natural biological community;
(8) Waters shall be free from used tires, car bodies, appliances, demolition debris, used vehicles or equipment and solid waste as defined in Missouri's Solid Waste Law, section 260.200, RSMo, except as the use of such materials is specifically permitted pursuant to section 260.200-260.247.

7. Industrial sludge will be rendered into a dry feed additive.

8. Domestic sludge will not be present, as all domestic wastewater will be treated by the City of Milan.

9. Whole Effluent Toxicity (WET) tests will be conducted as follows:

SUMMARY OF WET TESTING FOR THIS PERMIT				
OUTFALL	A.E.C. %	FREQUENCY	SAMPLE TYPE	MONTH
#001	100%	Quarterly	24 hr. composite	February, May, August & November

(a) Test Schedule and Follow-Up Requirements
(1) Perform a SINGLE-dilution test in the months and at the frequency specified above. For tests which are successfully passed, submit test results USING THE DEPARTMENT'S WET TEST REPORT FORM #MO-780-1899 along with complete copies of the test reports as received from the laboratory, including copies of chain-of-custody forms within 30 calendar days of availability to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102. If the effluent passes the test, do not repeat the test until the next test period.
(a) For discharges of stormwater, samples shall be collected within three hours from when discharge first occurs.
(b) Samples submitted for analysis of stormwater discharges shall be collected as a grab.
(c) For discharges of non-stormwater, samples shall be collected only when precipitation has not occurred for a period of forty-eight hours prior to sample collection. In no event shall sample collection occur simultaneously with the occurrence of precipitation excepting for stormwater samples.
(d) A twenty-four hour composite sample shall be submitted for analysis of non-stormwater discharges.
(e) Upstream receiving water samples, where required, shall be collected upstream from any influence of the effluent where downstream flow is clearly evident.
(f) Samples submitted for analysis of upstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
(g) Chemical and physical analysis of the upstream control and effluent sample shall occur immediately upon being received by the laboratory, prior to any manipulation of the effluent sample beyond preservation methods consistent with federal guidelines for WET testing that are required to stabilize the sample during shipping.
(h) Any and all chemical or physical analysis of the effluent sample performed in conjunction with the WET test shall be performed at the 100% Effluent concentration in addition to analyses performed upon any other effluent concentration.

C. SPECIAL CONDITIONS (cont.)

10. Whole Effluent Toxicity (WET) cont.

(i) All chemical analyses included in the Missouri Department of Natural Resources WET test report form #MO-780-1899 shall be performed and results shall be recorded in the appropriate field of the report form.
(j) Where flow-weighted composite sample is required for analysis, the samples shall be composited at the laboratory where the test is to be performed.
(k) Where in stream testing is required downstream from the discharge, sample collection shall occur immediately below the established Zone of Initial Dilution in conjunction with or immediately following a release or discharge.
(l) Samples submitted for analysis of downstream receiving water may be collected as either a grab or twenty-four-hour composite as appropriate to the nature of the discharge.
(m) All instream samples, including downstream samples, shall be tested for toxicity at the 100% concentration in addition to any other assigned AEC for in-stream samples.

(2) All failing test results along with complete copies of the test reports as received from the laboratory, INCLUDING THOSE TESTS CONDUCTED UNDER CONDITION (3) BELOW, shall be reported to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the availability of the results.
(3) If the effluent fails the test, a multiple dilution test shall be performed within 30 calendar days and biweekly thereafter, until one of the following conditions are met:
(a) THREE CONSECUTIVE MULTIPLE-DILUTION TESTS PASS. No further tests need to be performed until next regularly scheduled test period.
(b) A TOTAL OF THREE MULTIPLE-DILUTION TESTS FAIL.
(4) Failure of at least two multiple-dilution tests during any period of accelerated monitoring violates the permit narrative requirement for aquatic life protection.
(5) The permittee shall submit a CONCISE summary of all test results for the test series to the WATER PROTECTION PROGRAM, P.O. Box 176, Jefferson City, MO 65102 within 14 calendar days of the third failed test.
(6) Additionally, the following shall apply upon failure of the third MULTIPLE DILUTION test: A toxicity identification evaluation (TIE) or toxicity reduction evaluation (TRE) is automatically triggered. The permittee shall contact THE WATER PROTECTION PROGRAM within 14 calendar days from availability of the test results to ascertain as to whether a TIE or TRE is appropriate. The permittee shall submit a plan for conducting a TIE or TRE to the WATER PROTECTION PROGRAM within 60 calendar days of the date of DNR's direction to perform either a TIE or TRE. This plan must be approved by DNR before the TIE or TRE is begun. A schedule for completing the TIE or TRE shall be established in the plan approval.
(7) Upon DNR's approval, the TIE/TRE schedule may be modified if toxicity is intermittent during the TIE/TRE investigations. A revised WET test schedule may be established by DNR for this period.
(8) If a previously completed TIE has clearly identified the cause of toxicity, additional TIEs will not be required as long as effluent characteristics remain essentially unchanged and the permittee is proceeding according to a DNR approved schedule to complete a TRE and reduce toxicity. Regularly scheduled WET testing as required in the permit, without the follow-up requirements, will be required during this period.
(9) When WET test sampling is required to run over one DMR period, each DMR report shall contain a copy of the Department's WET test report form that was generated during the reporting period.
(10) Submit a concise summary in tabular format of all test results with the annual report.

(b) PASS/FAIL procedure and effluent limitations:
(1) To pass a single-dilution test, mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; $p = 0.05$) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other Federal guidelines as appropriate or required.
(2) To pass a multiple-dilution test:
(a) For facilities with a computed percent effluent at the edge of the zone of initial dilution, Allowable Effluent Concentration (AEC), OF 30% OR LESS THE AEC must be less than three-tenths (0.3) of the LC_{50} concentration for the most sensitive of the test organisms; **OR**,

C. SPECIAL CONDITIONS (cont.)

11. Whole Effluent Toxicity (WET) cont.

(b) For facilities with an AEC greater than 30% the LC50 concentration must be greater than 100%; **AND**,

(c) all effluent concentrations equal to or less than the AEC must be nontoxic. Mortality observed in all effluent concentrations equal to or less than the AEC shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the upstream receiving-water control sample. Where upstream receiving water is not available mortality observed in the AEC test concentration shall not be significantly different (at the 95% confidence level; p = 0.05) than that observed in the laboratory control. The appropriate statistical tests of significance shall be consistent with the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS or other federal guidelines as appropriate or required. Failure of one multiple-dilution test may be considered an effluent limit violation.

(c) Test Conditions

(1) Test Type: Acute Static non-renewal

(2) Test species: Ceriodaphnia dubia and Pimephales promelas (fathead minnow). Organisms used in WET testing shall come from cultures reared for the purpose of conducting toxicity tests and cultured in a manner consistent with the most current USEPA guidelines. All test animals shall be cultured as described in the most current edition of METHODS FOR MEASURING THE ACUTE TOXICITY OF EFFLUENTS AND RECEIVING WATERS TO FRESHWATER AND MARINE ORGANISMS.

(3) Test period: 48 hours at the "Acceptable Effluent Concentration" (AEC) specified above.

(4) When dilutions are required, upstream receiving stream water shall be used as dilution water. If upstream water is unavailable or if mortality in the upstream water exceeds 10%, "reconstituted" water will be used as dilution water. Procedures for generating reconstituted water will be supplied by the MDNR upon request.

(5) Single-dilution tests will be run with:

(a) Effluent at the AEC concentration;

(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

(c) reconstituted water.

(6) Multiple-dilution tests will be run with:

(a) 100%, 50%, 25%, 12.5%, and 6.25% effluent, unless the AEC is less than 25% effluent, in which case dilutions will be 4 times the AEC, two times the AEC, AEC, 1/2 AEC and 1/4 AEC;

(b) 100% receiving-stream water (if available), collected upstream of the outfall at a point beyond any influence of the effluent; and

(c) reconstituted water.

(7) If reconstituted-water control mortality for a test species exceeds 10%, the entire test will be rerun.

(8) If upstream control mortality exceeds 10%, the entire test will be rerun using reconstituted water as the dilutant.

SUMMARY OF TEST METHODOLOGY FOR WHOLE-EFFLUENT TOXICITY TESTS

Whole-effluent-toxicity test required in NPDES permits shall use the following test conditions when performing single or multiple dilution methods. Any future changes in methodology will be supplied to the permittee by the Missouri Department of Natural Resources (MDNR). Unless more stringent methods are specified by the DNR, the procedures shall be consistent with the most current edition of Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,

Test conditions for Ceriodaphnia dubia:

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light, 8 h dark
Size of test vessel:	30 mL (minimum)
Volume of test solution:	15 mL (minimum)
Age of test organisms:	<24 h old
No. of animals/test vessel:	5
No. of replicates/concentration:	4
No. of organisms/concentration:	20 (minimum)
Feeding regime:	None (feed prior to test)
Aeration:	None
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test acceptability criterion:	90% or greater survival in controls

Test conditions for (Pimephales promelas):

Test duration:	48 h
Temperature:	25 ± 1°C Temperatures shall not deviate by more than 3°C during the test.
Light Quality:	Ambient laboratory illumination
Photoperiod:	16 h light/ 8 h dark
Size of test vessel:	250 mL (minimum)
Volume of test solution:	200 mL (minimum)
Age of test organisms:	1-14 days (all same age)
No. of animals/test vessel:	10
No. of replicates/concentration:	4 (minimum) single dilution method 2 (minimum) multiple dilution method
No. of organisms/concentration:	40 (minimum) single dilution method 20 (minimum) multiple dilution method
Feeding regime:	None (feed prior to test)
Aeration:	None, unless DO concentration falls below 4.0 mg/L; rate should not exceed 100 bubbles/min.
Dilution water:	Upstream receiving water; if no upstream flow, synthetic water modified to reflect effluent hardness.
Endpoint:	Pass/Fail (Statistically significant Mortality when compared to upstream receiving water control or synthetic control if upstream water was not available at $p \leq 0.05$)
Test Acceptability criterion:	90% or greater survival in controls

Date of Fact Sheet:
April 14, 2006

Date of Public Notice: xxxxxx, 2006

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
FACT SHEET

This Fact Sheet explains the applicable regulations, rationale for development of this permit and the public participation process.

NPDES PERMIT NUMBER: MO-0115487

FACILITY NAME: Premium Standard Farms Milan Processing Plant

OWNER NAME: Premium Standard Farms

LOCATION: Secs. 35, T63N, R20W, Sullivan County

RECEIVING STREAM: Unnamed tributary to Elmwood Branch

FACILITY CONTACT PERSON: David Townsend TELEPHONE: (816) 843-1471

FACILITY DESCRIPTION AND RATIONALE

Premium Standard Farms (PSF) has applied for a renewal of the State Operating Permit for the PSF Milan Processing Plant, Sullivan County Missouri, Missouri State Operating Permit Number MO-0115487. The PSF Milan Processing Plant is a discharger of process wastewater resulting from the production of meat carcasses. The Standard Industrial Classification (SIC) code is 2011.

The PSF Milan Processing Plant Wastewater Treatment Facility is an activated sludge system. The existing wastewater treatment facilities are the combination of anoxic/oxidation ditch, with an equalization basin, anaerobic contact basin, and intermediate and final clarifiers, and a sludge storage tank. Sludge is rendered on-site. The plant is designed to treat the waste from a population equivalent of 88,235, after screening and dissolved air floation system for pretreatment, with a design flow of 0.8 MGD, and receives industrial wastewater. The facility discharges treated wastewater into an unnamed tributary to Elmwood Branch. The discharge point is designated as Outfall #001. Approximately one mile below the discharge points, the flow enters East Fork Locust Creek. East Fork Locust Creek is listed as a Class C stream. The beneficial uses of the classified portion of the stream include livestock and wildlife watering, protection of warm water aquatic life and human health-fish consumption, and whole body contact recreational category B.

The Federal Water Pollution Control Act ("Clean Water Act" Section 402 Public Law 92-500 as amended) established the National Pollutant Discharge Elimination System (NPDES) permit program. This program regulates the discharge of pollutants from point sources into the waters of the United States. All such discharges are unlawful without a permit (Section 301 of the "Clean Water Act"). After a permit is obtained, a discharge not in compliance with all permit terms and conditions is unlawful. Permits in Missouri are issued by the Director of the Department of Natural Resources under an approved program, operating in accordance with federal and state laws (Federal "Clean Water Act" and "Missouri Clean Water Law" Section 644 as amended).

MO-0115487
Premium Standard Farms Milan Processing Plant

10 CSR 20-7.031 Missouri Water Quality Standards, Missouri Department of Natural Resources (the Department) "defines the Clean Water Commission's water quality objectives in terms of water uses to be maintained and the criteria to protect those uses. The receiving stream's beneficial water uses to be maintained are: Livestock and Wildlife Watering, Protection of Warm Water Aquatic Life and Human Health-Fish Consumption, and Whole Body Contact Recreation Category B.

To protect these beneficial uses and the water quality of the receiving stream, effluent limitations are being established under federal and state laws.

EFFLUENT LIMIT DERIVATION & REATIONALE

Effluent Limit Guidelines have been promulgated for this industrial category (Meat Products Point Source Category – 40 CFR 432, Subpart B). Effluent limits derived using the Effluent Limit Guidelines are not protective of water quality and water quality based effluent limits are required.

This operating permit will be issued for a period of five years.

Missouri Department of Natural Resources
Water Protection Program
Water Pollution Control Branch

Water Quality Review Sheet

Facility Information

FACILITY NAME: Premium Standard Farms (PSF) - Milan Processing Plant
NPDES #: MO-0115487

FACILITY TYPE/DESCRIPTION: Upgrade and expansion to 1.0 MGD (10,000 head). Activated sludge facility w/ chlorination; industrial sludge is recycled as a feed additive.

EDU: Plains/Grand/Chariton Drainages
8-DIGIT HUC: 10280103
COUNTY: Sullivan

LEGAL DESCRIPTION: SW NW, Sec. 35, T63N, R20W
LATITUDE/LONGITUDE: +4013151/-09307060

WATER QUALITY HISTORY: Effluent Limit Guidelines (ELG) have been promulgated for this industrial category (Meat Products Point Source Category - 40 CFR 432, Subpart B). Effluent limits derived using the ELGs are not protective of water quality and water quality based effluent limits are required.

OUTFALL	DESIGN FLOW (CFS)	TREATMENT TYPE	RECEIVING WATERBODY	OTHER
001	1.55	Advanced Secondary	Tributary to Elmwood Branch	

Receiving Waterbody Information

WATERBODY	CLASS	WBID	1Q10 (CFS)	7Q10 (CFS)	30Q10 (CFS)	*DESIGNATED USES
Tributary to Elmwood Branch	U	---	0.0	0.0	0.0	General Criteria
Elmwood Branch	U	---	0.0	0.0	0.0	General Criteria
East Fork Locust Creek	C	0610	0.0	0.0	0.1	LWW, AQL, WBC

*Cool Water Fishery (CLF), Cold Water Fishery (CDF), Irrigation (IRR), Industrial (IND), Boating & Canoeing (BTG), Drinking Water Supply (DWS), Whole Body Contact Recreation (WBC), Protection of Warm water Aquatic Life and Human Health (AQL), Livestock & Wildlife Watering (LWW)

COMMENTS: Updated WQRS and associated water quality based effluent limits (WQBELs) developed to reflect results of wasteload allocation (WLA) surveys and water quality modeling conducted by MEC

Water Resources and LimnoTech, Inc. A Use Attainability Analysis (UAA) was conducted for East Fork Locust Creek in July 2005 and the whole body contact recreation designated use was retained.

Mixing Considerations

Mixing Zone (MZ): Not allowed, 7Q10 less than 0.1 cfs [10 CSR 20-7.031(4)(A)4.B.(I)(a)].

Zone of Initial Dilution (ZID): Not allowed [10 CSR 20-7.031(4)(A)4.B.(I)(b)].

$$A.E.C.\% = \left(\frac{DesignFlow + ZIDFlow}{DesignFlow}\right)^{-1} \times 100$$

Permit Limits and Information

TMDL Watershed: (Y or N)	W.L.A. Study Conducted: (Y or N)	Disinfection Required: (Y or N)	Use Attainability Analysis: (Y or N)
N	Y	Y	Y

OUTFALL #001– Main Facility Outfall

Wet Test (Y or N): Y Frequency: Once/Quarter A.E.C. 100 % Limit: 10 CSR 20-7.031(3)(I)

Parameter	Units	Daily Maximum	Weekly Average	Monthly Average	Monitoring Frequency
Flow	MGD	*		*	Once/Day
Temperature	°C	*		*	Once/Weekday
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)***	mg/L	30		25	Once/Weekday
Total Suspended Solids***	mg/L	36		30	Once/Weekday
pH	SU	6 – 9		6 - 9	Once/Weekday
Dissolved Oxygen	mg/L	**		**	Once/Weekday
Oil & Grease	mg/L	20		15	Once/Week
Total Ammonia Nitrogen (May 1 – Oct 31)	mg/L	5.0		2.5	Once/Week
Total Ammonia Nitrogen (Nov 1 – Apr 30)	mg/L	7.2		3.6	Once/Week
Fecal Coliform	Note 1	400		*	Once/Week
Total Residual Chlorine	mg/L	1.0		1.0	Once/Week
Chloride	mg/L	*		*	Once/Week
Total Nitrogen****	mg/L	*		*	Twice/Month
Total Phosphorous	mg/L	*		*	Twice/Month

* – Monitoring Requirement Only, ** – Dissolved Oxygen Minimum Concentration = 5.0 mg/L, Note 1 – Col/100 mL

*** – This facility is required to meet a removal efficiency of 85% or more for $CBOD_5$ and

TSS. Influent $CBOD_5$ and TSS data should be reported to ensure removal efficiency requirements are met.

**** – Total Nitrogen monitoring requirement shall include reporting of Total Kjehldahl Nitrogen (TKN), Nitrite + Nitrate ($NO_2 + NO_3$), and Ammonia (NH_3).

Receiving Water Monitoring Requirements

SITE S1 – DOWNSTREAM MONITORING LOCATION

PARAMETER	SAMPLING FREQUENCY	SAMPLE TYPE	LOCATION
DISSOLVED OXYGEN	Once/Quarter	Grab	Elmwood Branch at Highway 5
TOTAL AMMONIA NITROGEN	Once/Quarter	Grab	
TEMPERATURE	Once/Quarter	Grab	
PH	Once/Quarter	Grab	
CHLORIDE	Once/Quarter	Grab	

Derivation and Discussion of Limits

Wasteload allocations were calculated using water quality criteria or water quality model results and the dilution equation below:

$$C = \frac{(Cs \times Qs) + (Ce \times Qe)}{(Qe + Qs)}$$ (EPA/505/2-90-001, Section 4.5.5)

Where C = downstream concentration
Cs = upstream concentration
Qs = upstream flow
Ce = effluent concentration
Qe = effluent flow

Chronic wasteload allocations were determined using applicable chronic water quality criteria (CCC: criteria continuous concentration) and stream volume of flow at the edge of the mixing zone (MZ). Acute wasteload allocations were determined using applicable water quality criteria (CMC: criteria maximum concentration) and stream volume of flow at the edge of the zone of initial dilution (ZID).

Water quality based maximum daily and average monthly effluent limitations were calculated using methods and procedures outlined in USEPA's "Technical Support Document For Water Quality-based Toxics Control" (EPA/505/2-90-001).

Outfall #001 – ***Main Facility Outfall***

- **Carbonaceous Biochemical Oxygen Demand ($CBOD_5$).** Effluent Limit Guidelines (ELG) have been promulgated for this industrial category (40 CFR 432, Subpart B). Effluent limits derived using the ELGs are not protective of water quality and water quality based effluent limits are required.

  Staff have reviewed and approved a water quality model and $CBOD_5$ wasteload allocation (WLA) for the PSF – Milan Processing Plant submitted by MEC Water Resources and LimnoTech, Inc. The $CBOD_5$ WLA protective of water quality in East Fork Locust Creek is 30 mg/L. Effluent limitations for the facility are as follows:

Maximum Daily Limit (MDL) = WLA = 30 mg/L
Average Monthly Limit (AML) = 25 mg/L

The maximum daily limit (MDL) shall be equal to the wasteload allocation from the water quality model. The average monthly limit (AML) will be set at 25 mg/L as proposed by Premium Standard Farms. The proposed AML is more stringent than the existing AML and should account for effluent variability at the facility.

- **Total Suspended Solids (TSS).** Effluent Limit Guidelines promulgated for the Meat Products Point Source Category (40 CFR 432, Subpart B) maintain a ratio of 0.84:1 between BOD_5 and TSS. Effluent limitations for TSS have been calculated using the WQBELs calculated for $CBOD_5$ and this ratio.

MDL = 30.0 mg/L / 0.84 = 35.7 mg/L
AML = 25.0 mg/L / 0.84 = 29.8 mg/L

herefore, TSS effluent limitations of 30 mg/L average monthly, 36 mg/L daily maximum are required for this facility.

- **pH.** pH shall be maintained in the range from six to nine (6 – 9) standard units [10 CSR 20-7.015 (8)(B)2.]

- **Dissolved Oxygen.** Results of the QUAL2E water quality model indicate a dissolved oxygen minimum concentration of 5.0 mg/L is required at the $CBOD_5$ wasteload allocation to ensure maintenance of water quality criteria in East Fork Locust Creek.

- **Oil & Grease.** Effluent limitations from the existing state operating permit have been retained; 15 mg/L monthly average, 20 mg/L daily maximum.

- Total Ammonia Nitrogen. **Early Life Stages Present Total Ammonia Nitrogen criteria apply**

10 CSR 20-7.031(4)(B)7.C. & Table B3]. Wasteload allocations from the QUAL2E water quality model have been used for effluent limit calculations.

Summer

WLA = 2.0 mg/L

LTA_c = 2.0 mg/L (0.780) = 1.6 mg/L [CV = 0.6, 99th Percentile, n = 30]

MDL = 1.6 mg/L * 3.11 = 5.0 mg/L [CV = 0.6, 99th Percentile]
AML = 1.6 mg/L * 1.55 = 2.5 mg/L [CV = 0.6, 95th Percentile, n = 4]

Winter

WLA = 3.0 mg/L

LTA_c = 3.0 mg/L (0.780) = 2.3 mg/L [CV = 0.6, 99th Percentile, n = 30]

MDL = 2.3 mg/L * 3.11 = 7.2 mg/L [CV = 0.6, 99th Percentile]
AML = 2.3 mg/L * 1.55 = 3.6 mg/L [CV = 0.6, 95th Percentile,

n = 4]

Season	Maximum Daily Limit (mg/l)	Average Monthly Limit (mg/l)
Summer	5.0	2.5
Winter	7.2	3.6

- **Fecal Coliform.** Discharge shall not exceed a maximum of 400 colonies/100 mL at any time [40 CFR 432.22(a)(1)].

- **Total Residual Chlorine (TRC).** Effluent limitations from the existing state operating permit have been retained; additional WET Tests will be required in lieu of WQBELs.

- **Chloride.** Monitoring requirement only; additional WET Tests will be required in lieu of WQBELs.

- **Total Nitrogen.** Monitoring requirement only; Total Nitrogen monitoring requirement shall include reporting of Total Kjehldahl Nitrogen (TKN), Nitrite + Nitrate (NO_2 + NO_3), and Ammonia (NH_3).

- **Total Phosphorous.** Monitoring requirement only.

Reviewer: John Hoke
Date: March 31, 2006
Unit Chief: Refaat Mefrakis

Monitoring and effluent limits contained within this document have been developed in accordance with EPA guidelines using the best available data and are believed to be consistent with Missouri's Water Quality Standards and Effluent Regulations. If additional water quality data or anecdotal information are available that may affect the recommended monitoring and effluent limits, please forward these data and information to the author.